July 29, 2002

Mr. Lynne R. Harris
Executive Director
The Society of the Plastics Industry, Inc.
Epoxy Resin Systems Task Group
1801 K. Street, N.W.
Suite 600K
Washington, DC 20006-1301

Dear Mr. Harris:

The Office of Pollution and Toxics is transmitting EPA's comments on the robust summaries and test plan for n-Butyl Glycidyl Ether, posted on the ChemRTK HPV Challenge Program Web site on January 14, 2002. I commend The Epoxy Resin Systems Task Group for its commitment to the HPV Challenge Program.

EPA reviews test plans and robust summaries to determine whether the reported data and test plans will provide the data necessary to adequately characterize each SIDS endpoint. On its Challenge Web site, EPA has provided guidance for determining the adequacy of data and preparing test plans used to prioritize chemicals for further work.

EPA will post this letter and the enclosed Comments on the HPV Challenge Web site within the next few days. As noted in the comments, we ask that The Epoxy Resin Systems Task Group advise the Agency, within 60 days of this posting on the Web site, of any modifications to its submission.

If you have any questions about this response, please contact Richard Hefter, Chief of the HPV Chemicals Branch, at 202-564-7649. Submit questions about the HPV Challenge Program through the HPV Challenge Program Web site "Submit Technical Questions" button or through the TSCA Assistance Information Service (TSCA Hotline) at (202) 554-1404. The TSCA Hotline can also be reached by e-mail at tsca-hotline@epa.gov.

I thank you for your submission and look forward to your continued participation in the HPV Challenge Program.

Sincerely,

Oscar Hernandez, Director
Risk Assessment Division

Enclosure

cc: W. Sanders
A. Abramson

C. Auer
M. E. Weber

EPA Comments on Chemical RTK HPV Challenge Submission:
n-Butyl Glycidyl Ether

SUMMARY OF EPA COMMENTS

The Sponsor, the Society of the Plastics Industry, Inc., submitted a test plan and robust summaries to EPA for n-butyl glycidyl ether (CAS No. 2426-08-6) dated December 7, 2001. EPA posted the submission on the ChemRTK HPV Challenge Web site on January 14, 2002.

EPA has reviewed this submission and has reached the following conclusions:

1. Physicochemical and Environmental Fate Endpoints. The submitter needs to provide robust summaries for all physicochemical endpoints.

2. Health Endpoints. (a) The acute toxicity study is inadequate; the submitter needs to provide additional data to support the results. (b) Adequate data are available for repeated-dose toxicity. (c) The submitter needs to perform an *in vitro* chromosomal aberration test. (d) EPA agrees with the submitter's proposal that testing is necessary for developmental toxicity and recommends OECD Test Guideline 421. The submitter also needs to address deficiencies in the robust summaries.

3. Ecotoxicity. Adequate data are available for acute toxicity to fish, invertebrates, and aquatic plants.

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.

EPA COMMENTS ON THE N-BUTYL GLYCIDYL ETHER CHALLENGE SUBMISSION

General Comments

The submitter provided data for a structurally similar chemical, t-butyl glycidyl ether (CAS No. 7665-72-7) to address acute, repeated-dose, and reproductive toxicity endpoints. On pages 1 and 2 of the test plan the submitter discussed similarities in physicochemical and toxicological properties between n-butyl glycidyl ether and t-butyl glycidyl ether. EPA agrees that t-butyl glycidyl ether is an appropriate analog for n-butyl glycidyl ether for the purposes of the HPV Challenge Program.

Test Plan

Chemistry (melting point, boiling point, vapor pressure, water solubility, and partition coefficient).

The test plan for these endpoints is adequate for the purposes of the HPV Challenge Program. However, the submitter needs to provide robust summaries for all physicochemical endpoints. It is not sufficient to incorporate these data solely in the test plan.

Environmental Fate (photodegradation, stability in water, biodegradation, fugacity).

The test plan for these endpoints is adequate for the purposes of the HPV Challenge Program.

Health Effects.

Adequate data are available for repeated-dose and reproductive toxicity endpoints for the purposes of the HPV Challenge Program. However, the submitter needs to address deficiencies in the robust summaries.

Acute Toxicity. The submitter provided only one acute oral toxicity study on t-butyl glycidyl ether in rats that is considered inadequate because only two animals were used and one out of two animals died at the highest dose level of 2000 mg/kg. The submitter needs to provide additional data that are available in the literature to address this endpoint.

Genetic Toxicity. *Chromosomal aberrations.* The submitter provided positive results for bacterial mutagenicity assays and equivocal results in an *in vivo* dominant lethal gene mutation assay, which do not adequately address the chromosomal aberration endpoint. Therefore, EPA recommends that the submitter conduct an *in vitro* chromosomal aberration test following OECD guidelines.

Reproductive/Developmental Toxicity. An existing, adequate 90-day repeated-dose inhalation study on t-butyl glycidyl ether is available, and no adverse effects were seen on reproductive organs, including testes. EPA agrees with the submitter's proposal to conduct a developmental toxicity study and recommends the reproduction/developmental toxicity screening test (OECD Test Guideline 421).

Ecotoxicity.

The endpoints for fish, invertebrate, and algae are adequate for the purposes of the HPV Challenge Program. However, the submitter needs to provide missing data elements for the robust summaries.

Specific Comments on the Robust Summaries

Health Effects.

Repeated-dose Toxicity. For the submitted 90-day inhalation toxicity study in rats, mice and rabbits on t-butyl glycidyl ether, the submitter needs to provide quantitative data for all observed gross pathological findings, not just the incidence of darkened area of the lung and atelectasis in female rabbits. Also, the robust summary reported a NOAEL of 25 ppm for all three species; however, a reduction in hepatocyte size in female mice and male rabbits and the occurrence of atelectasis in female rabbits at this exposure level suggests that 25 ppm is a LOAEL for these two species. The submitter needs to address this discrepancy.

Ecotoxicity.

Fish and Algae. Missing data elements are: water hardness, pH, dissolved oxygen, and purity of the test substance.

Aquatic Invertebrates. Missing data elements are: water hardness, pH, dissolved oxygen, purity of the test substance, and the chemical concentrations tested.

Followup Activity

EPA requests that the submitter advise the Agency within 60 days of any modifications to its submission.